

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/010653

International filing date (day/month/year)
21.09.2004

Priority date (day/month/year)
29.09.2003

International Patent Classification (IPC) or both national classification and IPC
C07D257/04, C07D271/10, C07D277/24, C07D271/06, C07D213/50, C07D285/12, C07C317/24, C07D249/08,

Applicant
ISAGRO RICERCA S.R.L.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 1, 2, 5, 13, 14,16

because:

☒ the said international application, or the said claims Nos. 5 relate to the following subject matter which does not require an international preliminary examination (*specify*):

see separate sheet

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1, 2, 5, 13, 14,16 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the whole application or for said claims Nos.

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See separate sheet for further details

**WRITTEN OPINION OF THE
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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 3,4,11,12,14,15

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	3,4,11,12,14,15
	No: Claims	
Inventive step (IS)	Yes: Claims	3,4,11,12,14,15
	No: Claims	
Industrial applicability (IA)	Yes: Claims	3,4,11,12,14,15
	No: Claims	

2. Citations and explanations

see separate sheet

III. Non-establishment of opinion

Claim 5 relates to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(i) PCT).

Certain of the definitions of substituents are not unambiguous: for example, in claim 3 in the definition of R on line 21, p. 255 the definition reads "possibly substituted with....." and it is not clear where the definition stops referring to optional substituents of the R groups and where it starts referring to the R groups themselves again - for example, are the alkenyl and alkynyl groups referred to on p. 255, l. 23-24 substituents of the R groups or are they R groups themselves? This unclarity occurs widely in the claims.

Compounds of general formula (I) are already known to such an extent that, despite the presence in claim 1 of a list of over 6 pages of disclaimed compounds, claim 1 still lacks novelty. So many documents anticipating this claim were found that it was not possible to perform any kind of meaningful complete search. Furthermore, no subgroup has been found in the application which could form the basis for a meaningful complete search. The search report merely cites a representative selection of documents anticipating claim 1. It should moreover be noted that it is not appropriate to use a Markush formula to claim a general family of compounds when this family is already known to such an extent that several hundred individual compounds need to be excluded from the claimed scope by proviso. Such a claiming method makes it unduly burdensome for the reader of the claims to ascertain the scope of protection (Article 6 PCT). Claim 2 is dependent on claim 1 but does not limit the scope of this claim in any way, therefore it was not possible to perform a meaningful search of this claim either. Claims 13 and 16 concern herbicidal compositions containing compounds of formula (I). Herbicidal compositions are interpreted as being compositions suitable for use as herbicides (see PCT Guidelines III, 4.8). It is clear from the description, p. 121-122, that these compositions may be e.g. solutions of compounds of general formula (I) in organic solvents. Thus every document disclosing a compound of formula (I) in solution is considered novelty-destroying for these claims. This includes all the documents disclosing solutions of the compounds of formula (I) excluded by proviso from claim 1. In view of the very large number of

documents disclosing such solutions, it was not possible to perform a meaningful search of claims 13 and 16.

Claim 14 concerns herbicidal compositions including other active principles. It is not clear what is meant by "active principles". This claim has only been searched insofar as the active principle is a herbicide, fungicide, insecticide, acaricide or fertilizer.

In summary, it was only possible to perform a meaningful search for claims 3-12, 14 (part) and 15. The following examination is based on these claims only.

IV. Lack of unity

Where a group of inventions is claimed in one and the same international application, the requirement of unity referred to in Rule 13.1 PCT shall be fulfilled only where there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art (Rule 13.2 PCT).

The only feature in common between use claim 3 and use claim 5 is general formula (I). However, compounds of general formula (I) are already extensively known (see the over 6 pages of provisos in claim 1 that the applicant has considered necessary to establish novelty of the compound claim over the prior art, as well as the documents mentioned in the International Search Report as being X for this claim). It is therefore clear that general formula (I) cannot be the special technical feature required by Rule 13.2 PCT. No other common feature can be identified. Therefore claims 3 and 5 lack unity with one another.

Furthermore, the only common feature between each of claims 3 and 5 and the processes of claims 6-10 is general formula (I). As outlined above, general formula (I) cannot form the special technical feature required by Rule 13.2 PCT, because compounds of this formula are already extensively known. Thus the processes of claims 6-10 are neither unitary with claim 3 nor with claim 5.

The application has been divided into the following unitary inventions.

Invention 1: Claims 3, 4, 11, 12, 14(part), 15 - use of compounds of formula (I) as herbicides and their compositions containing additional herbicides

Invention 2: Claim 5 - use of compounds of formula (I) as medicaments

Invention 3: Claims 6-10 - processes for preparing compounds of formula (I)

The following examination has been performed for invention 1 only.

V. Reasoned statement

Reference is made to the following documents:

D1: PL 171529

D2: Pestic. Sci. 1980 11-439-444

Novelty

D1 discloses the herbicidal use of compounds of a general formula. It appears that present claim 3 does not allow the R group to be $-C(R^2)(R^6)Ophenyl$, thus present claim 3 is new over D1.

D2 discloses the herbicidal use of compound (I), which differs from present formula (I) because it lacks the present cyclic B group, and because it has a phenyl group corresponding to the present R group, whereas the present R group cannot be a cyclic group.

Claims 3, 4, 11, 12, 14 and 15 fulfil the requirements of Article 33(2) PCT.

Inventive step

The technical problem underlying the present claims appears to be the provision of further herbicidal uses and compositions. Neither D1 nor D2 provide any incentive to replace their $-C(R^2)(R^6)Ophenyl$ or -phenyl substituents by the present R group. Therefore those claimed uses which do in fact provide the desired herbicidal effect may be considered inventive. It is however noted that the claimed definition of R goes far beyond that which has been exemplified. In the regional phase of examination the applicant may be required to provide further data or arguments to show that the entire scope of the claims solves the technical problem.

Claims 3, 4, 11, 12, 14 and 15 fulfil the requirements of Article 33(3) PCT.

Industrial applicability

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Claims 3, 4, 11, 12, 14 and 15 fulfil the requirements of Article 33(4) PCT.